The claims defining the invention are as follows:

1 An alkaloid formulation comprising the reaction product of one or more alkaloids with one or more phosphate derivatives of one or more electron transfer agents.

2 The alkaloid formulation according to claim 1 wherein the phosphate derivative of a electron transfer agent is selected from the group comprising one or more phosphate derivatives of tocopherol.

3 The alkaloid formulation according to claim 1 wherein the formulation is a topical formulation.

4 The alkaloid formulation according to claim 1 wherein the formulation is an oral formulation.

5 The alkaloid formulation according to claim 4 further comprising an enteric coating.

6 The alkaloid formulation according to claim 4 wherein the formulation is selected from the group consisting of tablets, powders, chewable tablets, capsules, oral suspensions, suspensions, emulsions or fluids, children's formulations, enteral feeds, nutraceuticals, and functional foods.

7 The alkaloid formulation according to claim 1 wherein the formulation is a buccal formulation.

8 The alkaloid formulation according to any one of the preceding claims wherein the electron transfer agent is selected from the group consisting of hydroxy chromans including alpha, beta, gamma and delta tocols in enantiomeric and racemic forms; quinols being the reduced forms of vitamin K1 and ubiquinone; hydroxy carotenoids including retinol; calciferol, ascorbic acid and mixtures thereof.

9 The alkaloid formulation according to claim 8 wherein the electron transfer agent is selected from the group consisting of tocopherol and other tocols, retinol, vitamin K1 and mixtures thereof.

10 The alkaloid formulation according to claim 9 wherein the electron transfer agent is selected from the group consisting of the tocols and mixtures thereof.

11 The alkaloid formulation according to claim 10 wherein the electron transfer agent is α-tocopherol.

12 The alkaloid formulation according to claim 11 wherein the one or more phosphate derivatives of one or more electron transfer agents is selected from the group consisting of mono-tocopheryl phosphate, di-tocopheryl phosphate and mixtures thereof.

13 The alkaloid formulation according to claim 12 wherein the one or more phosphate derivatives of one or more electron transfer agents is a mixture of mono-tocopheryl phosphate and di-tocopheryl phosphate.

14 The alkaloid formulation according to any one of claims 1 to 11 wherein the one or more phosphate derivatives of one or more electron transfer agents is a phosphatide.

15 The alkaloid formulation according to any one of the preceding claims wherein the alkaloid is selected from the group consisting of tertiary amines which are alicyclic with the nitrogen atom as a common member of three rings; are cyclic where the nitrogen is incorporated into a single ring and alkylated; or have no cyclic structure incorporating the nitrogen; and mixtures thereof.

16 The alkaloid formulation according to claim 15 wherein the alkaloid is selected from the group consisting of atropine, quinine, opioids, fentanyl, nicotine, fenspiride, flurazepan and codeine.

17 The alkaloid formulation according to any one of the preceding claims wherein the alkaloid is atropine.

18 The alkaloid formulation according to any one of the preceding claims wherein the alkaloid is morphine.

19 A method for improving the efficacy of an alkaloid, said method comprising the step of reacting the alkaloid with one or more phosphate derivative of one or more electron transfer agents.

20 Use of the reaction product of one or more alkaloids with one or more phosphate derivatives of one or more electron transfer agents, together with excipients in the manufacture of a formulation.

21 A pharmaceutical composition comprising the reaction product of one or more alkaloids with one or more phosphate derivatives of one or more electron transfer agents.

22 A pharmaceutical composition according to claim 21 wherein the electron transfer agent is tocopherol.